

Course Description

Exploration is the key to success in this course. As a member of an exploration team, students investigate the atmosphere, freshwater hydrology, ocean floor features, plate tectonics, geologic principles, the rock cycle, geologic time, and space. Students will have the opportunity to do hands on activities in each module and they will interact with the course content in a variety of ways.

Four perspectives taken during explorations will provide the backdrop for the development of course concepts, activities, and web adventures: Global, Regional, Note: The honors component is built into the course, so every student who successfully completes the course as written will receive honors credit.

Course Syllabus

Module 4: The Lands

Plate Tectonics

- Historical Aspect
- Plate boundaries and movements
- Volcanoes, earthquakes, tsunamis

Geology

- Minerals
- Rocks, rock cycle
- Soil, soil formation
- Erosion and erosional forces

Honors (all of the above plus):

- Geologic make up of student's local region
- Karst geology - development and land features
- Mineral/geologic resources of their region

Module 5: The Past

Time

- Relative and absolute time
- Relative and absolute dating methods (radiometric dating techniques) related to scientific age
- Estimates of fossil and earth age

Geologic Time

- Geologic time scale, geologic periods and history
- Fossils, fossil formation
- Reading series of events in sedimentary rocks based on principles of geology

Honors (all of the above plus):

- Paleontology-Fossils of Local Region
- Archeology

Module 6: Space: The Final Frontier

Origins of the Universe

- Scientific theories of universe origin
- Space exploration methods
- Remote sensing
- General introduction to objects in the universe such as nebulae, galaxies, gas cloud, and comets

Our Solar System

- Organization of the Milky Way and types of galaxies in general
- Characteristics of stars - focus on ours - the sun
- The planets
- Moon phases
- Effects of moon on tides
- Rotation and revolution characteristics
- Causes of seasons

Course Objectives Course Concepts/Content

Major concepts/content. The purpose of this course is to develop concepts basic to the earth, its materials, processes, history, and environment in space:

- The nature of science
- Geologic divisions of the earth
- Formation of rivers and water systems
- Glaciers
- Hydrologic cycles
- Physical oceanography